FIG. 1

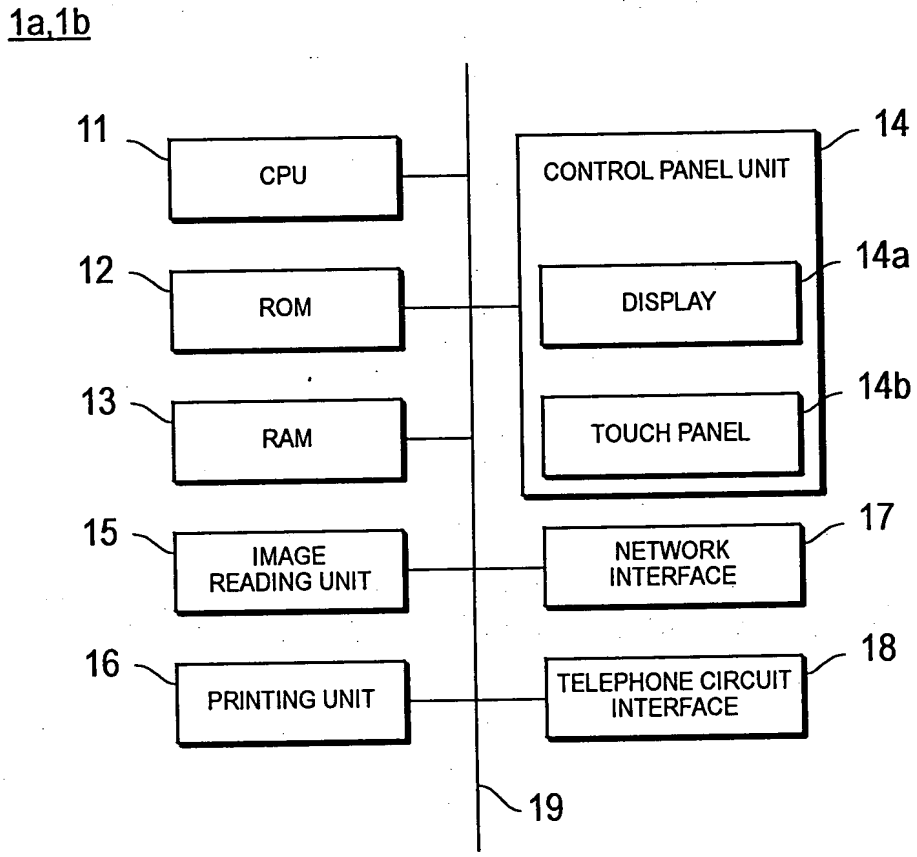

1a,1b
11
CPU
12
ROM
13
RAM
15
IMAGE READING UNIT
16
PRINTING UNIT
14
CONTROL PANEL UNIT
14a
DISPLAY
14b
TOUCH PANEL
17
NETWORK INTERFACE
18
TELEPHONE CIRCUIT INTERFACE
19

FIG. 2

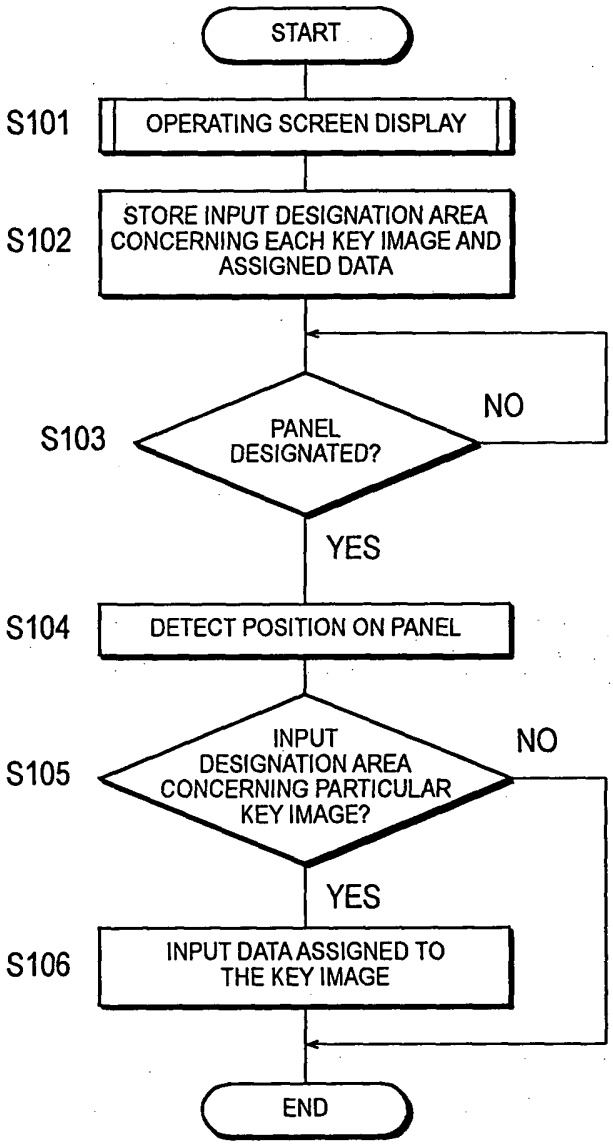

START
S101
OPERATING SCREEN DISPLAY
S102
STORE INPUT DESIGNATION AREA CONCERNING EACH KEY IMAGE AND ASSIGNED DATA
S103
PANEL DESIGNATED?
NO
YES
S104
DETECT POSITION ON PANEL
S105
INPUT DESIGNATION AREA CONCERNING PARTICULAR KEY IMAGE?
NO
YES
S106
INPUT DATA ASSIGNED TO THE KEY IMAGE
END

FIG. 3

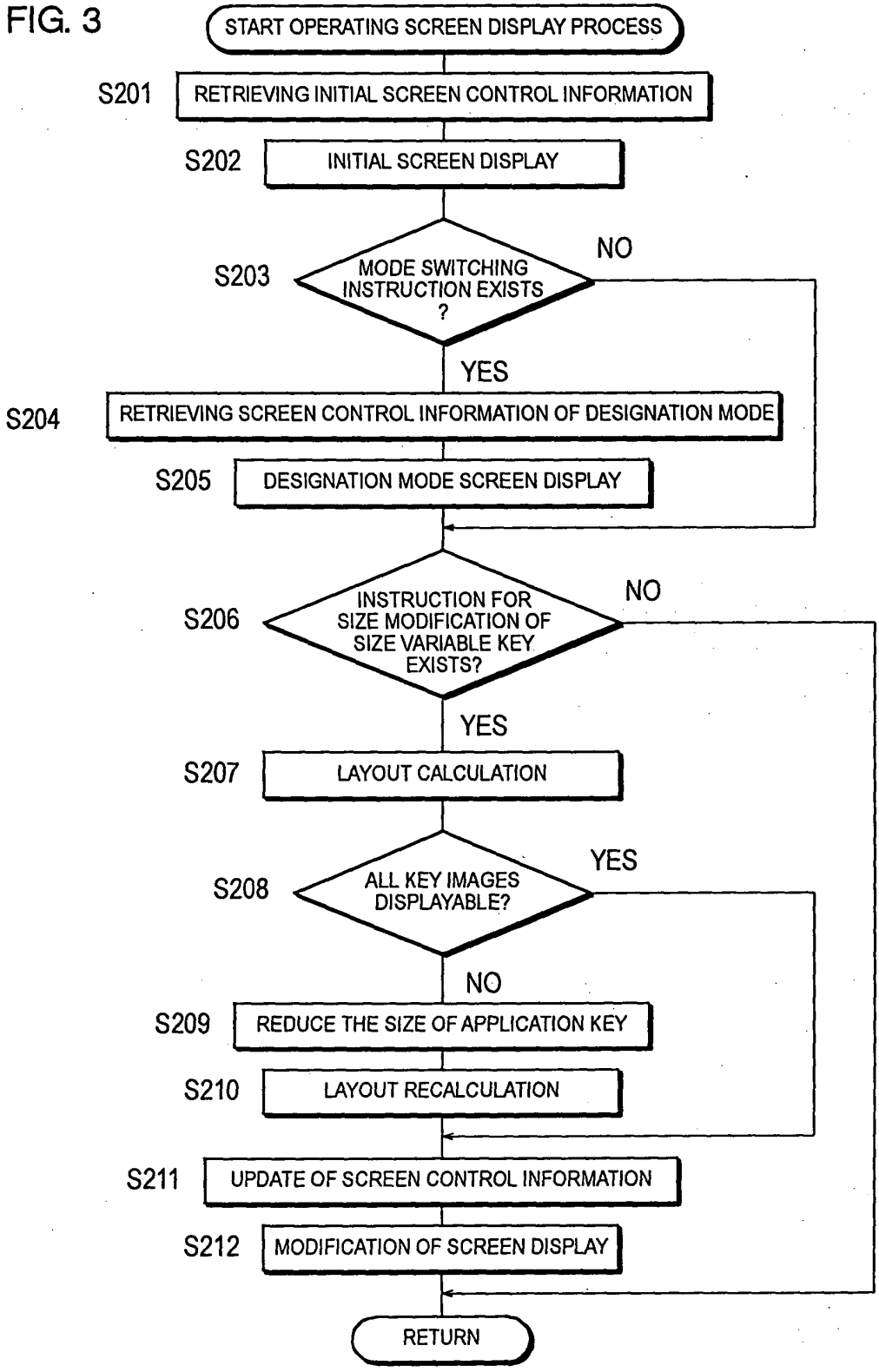

START OPERATING SCREEN DISPLAY PROCESS
S201
RETRIEVING INITIAL SCREEN CONTROL INFORMATION
S202
INITIAL SCREEN DISPLAY
S203
MODE SWITCHING INSTRUCTION EXISTS ?
NO
YES
S204
RETRIEVING SCREEN CONTROL INFORMATION OF DESIGNATION MODE
S205
DESIGNATION MODE SCREEN DISPLAY
S206
INSTRUCTION FOR SIZE MODIFICATION OF SIZE VARIABLE KEY EXISTS?
NO
YES
S207
LAYOUT CALCULATION
S208
ALL KEY IMAGES DISPLAYABLE?
YES
NO
S209
REDUCE THE SIZE OF APPLICATION KEY
S210
LAYOUT RECALCULATION
S211
UPDATE OF SCREEN CONTROL INFORMATION
S212
MODIFICATION OF SCREEN DISPLAY
RETURN

FIG. 4 21

SCREEN MODE: COPY MODE							
KEY IMAGE GROUP	KEY IMAGE CLASSIFICATION	CONSTITUTIONAL KEY IMAGE	KEY IMAGE DATA	STATUS			ATTRIBUTE
				SIZE	POSITON (X_m, Y_m) (X_n, Y_n)		
START KEY	SIZE VARIABLE KEY	START	A_1	100%	(X_{mA1}, Y_{mA1}) (X_{nA1}, Y_{nA1})		VARIABLE SIZE, VARIABLE POSITION
MODE SWITCHING KEY	BASIC KEY	COPY	D_1	100%	(X_{mD1}, Y_{mD1}) (X_{nD1}, Y_{nD1})		FIXED SIZE, FIXED POSITION
		FAX	D_2		(X_{mD2}, Y_{mD2}) (X_{nD2}, Y_{nD2})		
		SCAN	D_3		(X_{mD3}, Y_{mD3}) (X_{nD3}, Y_{nD3})		
		CONTROL	D_4		(X_{mD4}, Y_{mD4}) (X_{nD4}, Y_{nD4})		
SIZE MODIFYING KEY	BASIC KEY	↑	C_1	100%	(X_{mC1}, Y_{mC1}) (X_{nC1}, Y_{nC1})		FIXED SIZE, VARIABLE POSITION
		↓	C_2		(X_{mC2}, Y_{mC2}) (X_{nC2}, Y_{nC2})		
TEN KEY	BASIC KEY	1	B_1	100%	(X_{mB1}, Y_{mB1}) (X_{nB1}, Y_{nB1})		FIXED SIZE, VARIABLE POSITION
		⋮	⋮		⋯		
		0	B_{10}		(X_{mB10}, Y_{mB10}) (X_{nB10}, Y_{nB10})		
		.	B_{11}		(X_{mB11}, Y_{mB11}) (X_{nB11}, Y_{nB11})		
MAGNIFICATION KEY	APPLICATION KEY	1.41	F_1	100%	(X_{mF1}, Y_{mF1}) (X_{nF1}, Y_{nF1})		REDUCIBLE SIZE, VARIABLE POSITION
		1.21	F_2		(X_{mF2}, Y_{mF2}) (X_{nF2}, Y_{nF2})		
		1.00	F_3		(X_{mF3}, Y_{mF3}) (X_{nF3}, Y_{nF3})		
		0.80	F_4		(X_{mF4}, Y_{mF4}) (X_{nF4}, Y_{nF4})		
		0.71	F_5		(X_{mF5}, Y_{mF5}) (X_{nF5}, Y_{nF5})		
PAPER SIZE KEY	APPLICATION KEY	A3	E_1	100%	(X_{mE1}, Y_{mE1}) (X_{nE1}, Y_{nE1})		REDUCIBLE SIZE, VARIABLE POSITION
		B4	E_2		(X_{mE2}, Y_{mE2}) (X_{nE2}, Y_{nE2})		
		A4	E_3		(X_{mE3}, Y_{mE3}) (X_{nE3}, Y_{nE3})		
		B5	E_4		(X_{mE4}, Y_{mE4}) (X_{nE4}, Y_{nE4})		
		A5	E_5		(X_{mE5}, Y_{mE5}) (X_{nE5}, Y_{nE5})		
MESSAGE DISPLAY AREA	—	—	G_1	100%	(X_{mG1}, Y_{mG1}) (X_{nG1}, Y_{nG1})		FIXED SIZE, FIXED POSITION

FIG. 5

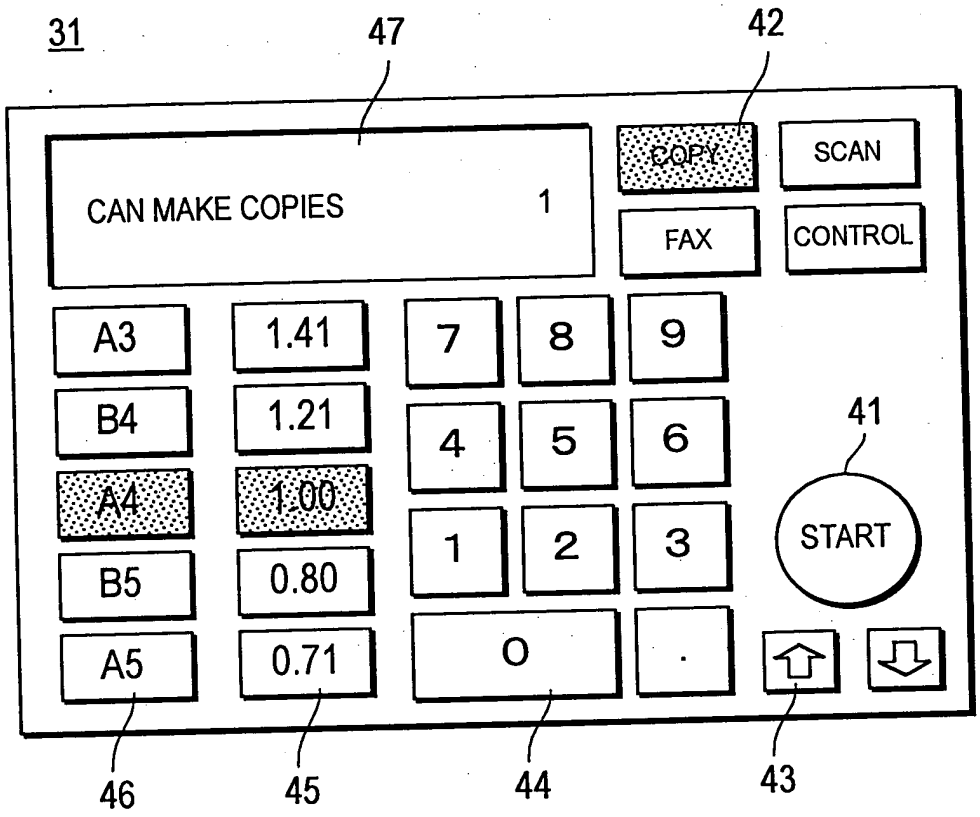

31
47
42
CAN MAKE COPIES
1
COPY
SCAN
FAX
CONTROL
A3
B4
A4
B5
A5
1.41
1.21
1.00
0.80
0.71
7
8
9
4
5
6
1
2
3
0
.
41
START
46
45
44
43

FIG. 6

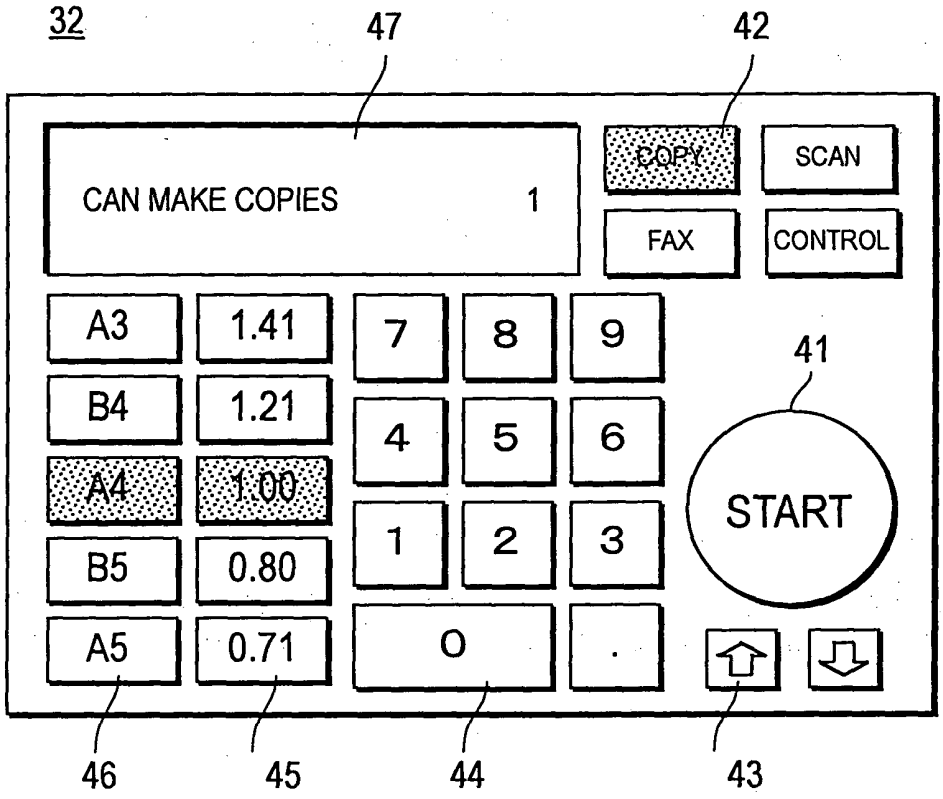

32
47
42
CAN MAKE COPIES 1
COPY
SCAN
FAX
CONTROL
A3
1.41
B4
1.21
A4
1.00
B5
0.80
A5
0.71
7
8
9
4
5
6
1
2
3
0
.
41
START
46
45
44
43

FIG. 7 22

SCREEN MODE: COPY MODE						
KEY IMAGE GROUP	KEY IMAGE CLASSIFICATION	CONSTITUTIONAL KEY IMAGE	KEY IMAGE DATA	STATUS		ATTRIBUTE
				SIZE	POSITON (X_m, Y_m) (X_n, Y_n)	
START KEY	SIZE VARIABLE KEY	START	A_1	200%	(X_{mA1}', Y_{mA1}') (X_{nA1}', Y_{nA1}')	VARIABLE SIZE, VARIABLE POSITION
MODE SWITCHING KEY	BASIC KEY	COPY	D_1	100%	(X_{mD1}, Y_{mD1}) (X_{nD1}, Y_{nD1})	FIXED SIZE, FIXED POSITION
		FAX	D_2		(X_{mD2}, Y_{mD2}) (X_{nD2}, Y_{nD2})	
		SCAN	D_3		(X_{mD3}, Y_{mD3}) (X_{nD3}, Y_{nD3})	
		CONTROL	D_4		(X_{mD4}, Y_{mD4}) (X_{nD4}, Y_{nD4})	
SIZE MODIFICATION KEY	BASIC KEY	↑	C_1	100%	(X_{mC1}', Y_{mC1}') (X_{nC1}', Y_{nC1}')	FIXED SIZE, VARIABLE POSITION
		↓	C_2		(X_{mC2}', Y_{mC2}') (X_{nC2}', Y_{nC2}')	
TEN KEY	BASIC KEY	1	B_1	100%	(X_{mB1}', Y_{mB1}') (X_{nB1}', Y_{nB1}')	FIXED SIZE, VARIABLE POSITION
		⋮	⋮		⋮	
		0	B_{10}		(X_{mB10}', Y_{mB10}') (X_{nB10}', Y_{nB10}')	
		.	B_{11}		(X_{mB11}', Y_{mB11}') (X_{nB11}', Y_{nB11}')	
MAGNIFICATION KEY	APPLICATION KEY	1.41	F_1	50%	(X_{mF1}', Y_{mF1}') (X_{nF1}', Y_{nF1}')	SIZE REDUCIBLE,VARIABLE POSITION
		1.21	F_2		(X_{mF2}', Y_{mF2}') (X_{nF2}', Y_{nF2}')	
		1.00	F_3		(X_{mF3}', Y_{mF3}') (X_{nF3}', Y_{nF3}')	
		0.80	F_4		(X_{mF4}', Y_{mF4}') (X_{nF4}', Y_{nF4}')	
		0.71	F_5		(X_{mF5}', Y_{mF5}') (X_{nF5}', Y_{nF5}')	
PAPER SIZE KEY	APPLICATION KEY	A3	E_1	50%	(X_{mE1}', Y_{mE1}') (X_{nE1}', Y_{nE1}')	SIZE REDUCIBLE,VARIABLE POSITION
		B4	E_2		(X_{mE2}', Y_{mE2}') (X_{nE2}', Y_{nE2}')	
		A4	E_3		(X_{mE3}', Y_{mE3}') (X_{nE3}', Y_{nE3}')	
		B5	E_4		(X_{mE4}', Y_{mE4}') (X_{nE4}', Y_{nE4}')	
		A5	E_5		(X_{mE5}', Y_{mE5}') (X_{nE5}', Y_{nE5}')	
MESSAGE DISPLAY AREA	—	—	G_1	100%	(X_{mG1}, Y_{mG1}) (X_{nG1}, Y_{nG1})	FIXED SIZE, FIXED POSITION

APPLN. FILING DATE: AUGUST 6, 2003
TITLE: DATA INPUT DEVICE, IMAGE PROCESSING DEVICE, DATA INPUT METHOD AND COMPUTER READABLE RECORDING MEDIUM ON WHICH DATA . . .
INVENTOR(S): TSUTOMU YOSHIMI ET AL.
ATTORNEY'S DOCKET NO: 011350-315 SHEET 7 of 13

FIG. 8

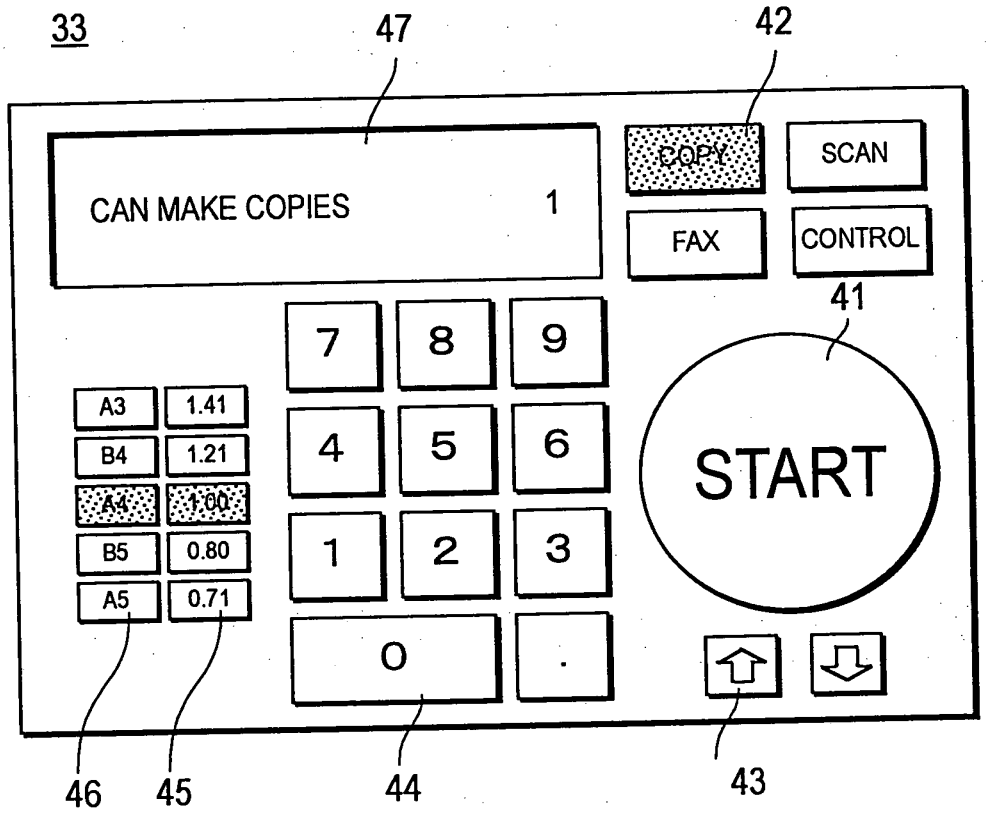

33
47
42
CAN MAKE COPIES
1
COPY
SCAN
FAX
CONTROL
41
7
8
9
4
5
6
1
2
3
0
.
START
A3
1.41
B4
1.21
A4
1.00
B5
0.80
A5
0.71
46
45
44
43

FIG. 9

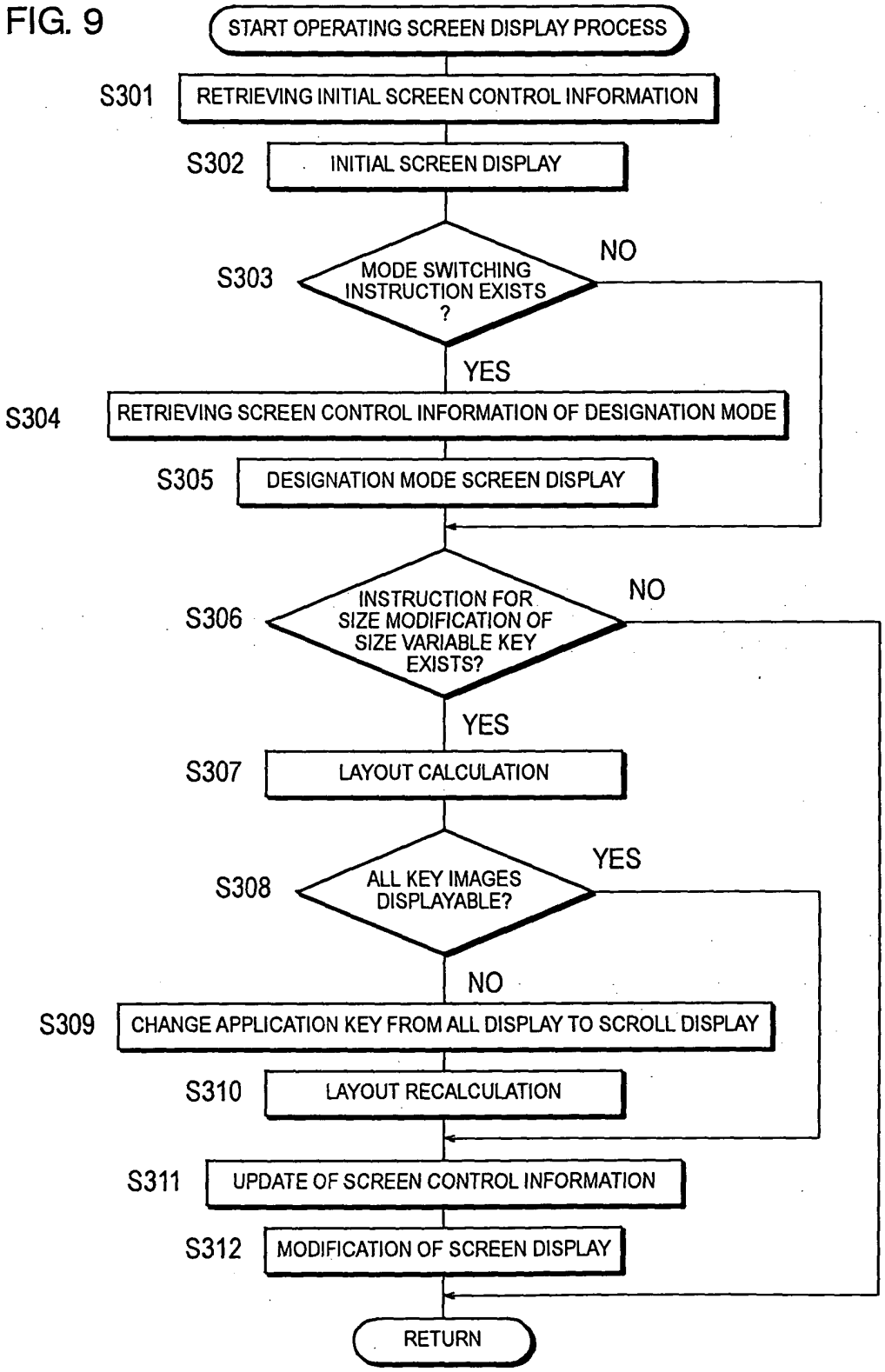

START OPERATING SCREEN DISPLAY PROCESS
S301
RETRIEVING INITIAL SCREEN CONTROL INFORMATION
S302
INITIAL SCREEN DISPLAY
S303
MODE SWITCHING INSTRUCTION EXISTS ?
NO
YES
S304
RETRIEVING SCREEN CONTROL INFORMATION OF DESIGNATION MODE
S305
DESIGNATION MODE SCREEN DISPLAY
S306
INSTRUCTION FOR SIZE MODIFICATION OF SIZE VARIABLE KEY EXISTS?
NO
YES
S307
LAYOUT CALCULATION
S308
ALL KEY IMAGES DISPLAYABLE?
YES
NO
S309
CHANGE APPLICATION KEY FROM ALL DISPLAY TO SCROLL DISPLAY
S310
LAYOUT RECALCULATION
S311
UPDATE OF SCREEN CONTROL INFORMATION
S312
MODIFICATION OF SCREEN DISPLAY
RETURN

FIG. 10 23

SCREEN MODE: COPY MODE						
KEY IMAGE GROUP	KEY IMAGE CLASSIFICATION	CONSTITUTIONAL KEY IMAGE	KEY IMAGE DATA	STATUS		ATTRIBUTE
				SIZE	POSITON (X_m, Y_m) (X_n, Y_n)	
START KEY	VARIABLE SIZE KEY	START	A_1	100%	(X_{mA1}, Y_{mA1}) (X_{nA1}, Y_{nA1})	VARIABLE SIZE, VARIABLE POSITION
MODE SWITCHING KEY	BASIC KEY	COPY	D_1	100%	(X_{mD1}, Y_{mD1}) (X_{nD1}, Y_{nD1})	FIXED SIZE, FIXED POSITION
		FAX	D_2		(X_{mD2}, Y_{mD2}) (X_{nD2}, Y_{nD2})	
		SCAN	D_3		(X_{mD3}, Y_{mD3}) (X_{nD3}, Y_{nD3})	
		CONTROL	D_4		(X_{mD4}, Y_{mD4}) (X_{nD4}, Y_{nD4})	
SIZE MODIFICATION KEY	BASIC KEY	↑	C_1	100%	(X_{mC1}, Y_{mC1}) (X_{nC1}, Y_{nC1})	FIXED SIZE, VARIABLE POSITION
		↓	C_2		(X_{mC2}, Y_{mC2}) (X_{nC2}, Y_{nC2})	
TEN KEY	BASIC KEY	1	B_1	100%	(X_{mB1}, Y_{mB1}) (X_{nB1}, Y_{nB1})	FIXED SIZE, VARIABLE POSITION
		⋮	⋮		⋮	
		0	B_{10}		(X_{mB10}, Y_{mB10}) (X_{nB10}, Y_{nB10})	
		.	B_{11}		(X_{mB11}, Y_{mB11}) (X_{nB11}, Y_{nB11})	
MAGNIFICATION KEY	APPLICATION KEY	1.41	F_1	100%	(X_{mF1}, Y_{mF1}) (X_{nF1}, Y_{nF1})	FIXED SIZE,VARIABLE POSITION
		1.21	F_2		(X_{mF2}, Y_{mF2}) (X_{nF2}, Y_{nF2})	
		1.00	F_3		(X_{mF3}, Y_{mF3}) (X_{nF3}, Y_{nF3})	
		0.80	F_4		(X_{mF4}, Y_{mF4}) (X_{nF4}, Y_{nF4})	
		0.71	F_5		(X_{mF5}, Y_{mF5}) (X_{nF5}, Y_{nF5})	
		1.41 – 0.71 SCROLL	F_6	NO DISPLAY	NO DISPLAY	
PAPER SIZE KEY	APPLICATION KEY	A3	E_1	100%	(X_{mE1}, Y_{mE1}) (X_{nE1}, Y_{nE1})	FIXED SIZE,VARIABLE POSITION
		B4	E_2		(X_{mE2}, Y_{mE2}) (X_{nE2}, Y_{nE2})	
		A4	E_3		(X_{mE3}, Y_{mE3}) (X_{nE3}, Y_{nE3})	
		B5	E_4		(X_{mE4}, Y_{mE4}) (X_{nE4}, Y_{nE4})	
		A5	E_5		(X_{mE5}, Y_{mE5}) (X_{nE5}, Y_{nE5})	
		A2 – A5 SCROLL	E_6	NO DISPLAY	NO DISPLAY	
MESSAGE DISPLAY AREA	–	–	G_1	100%	(X_{mG1}, Y_{mG1}) (X_{nG1}, Y_{nG1})	FIXED SIZE, FIXED POSITION

FIG. 11

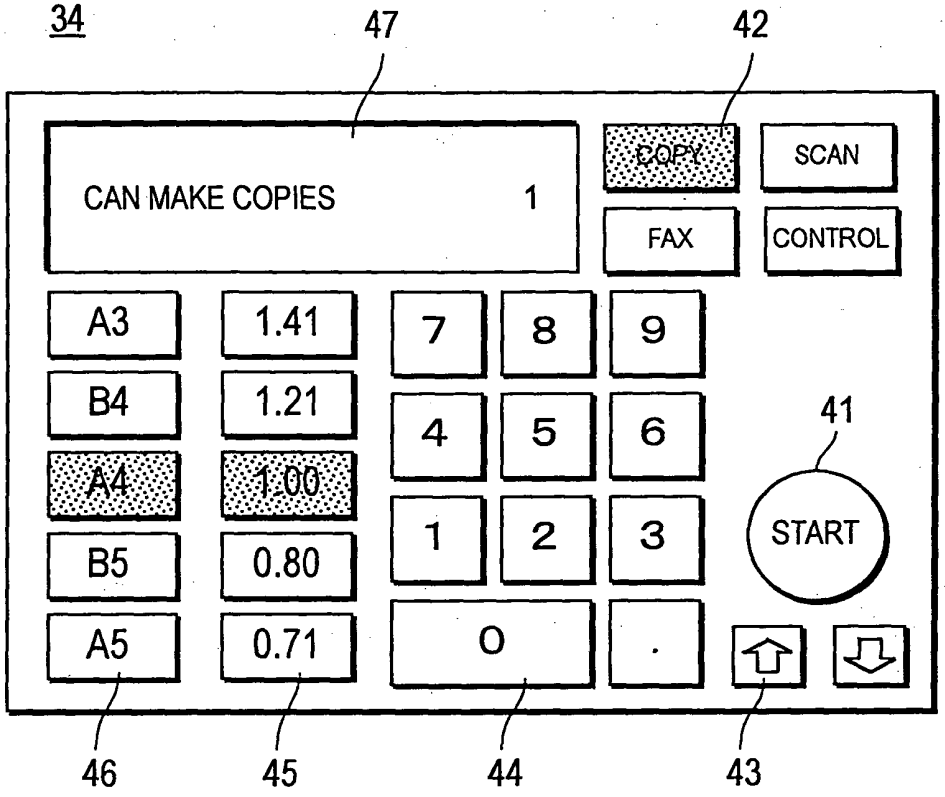
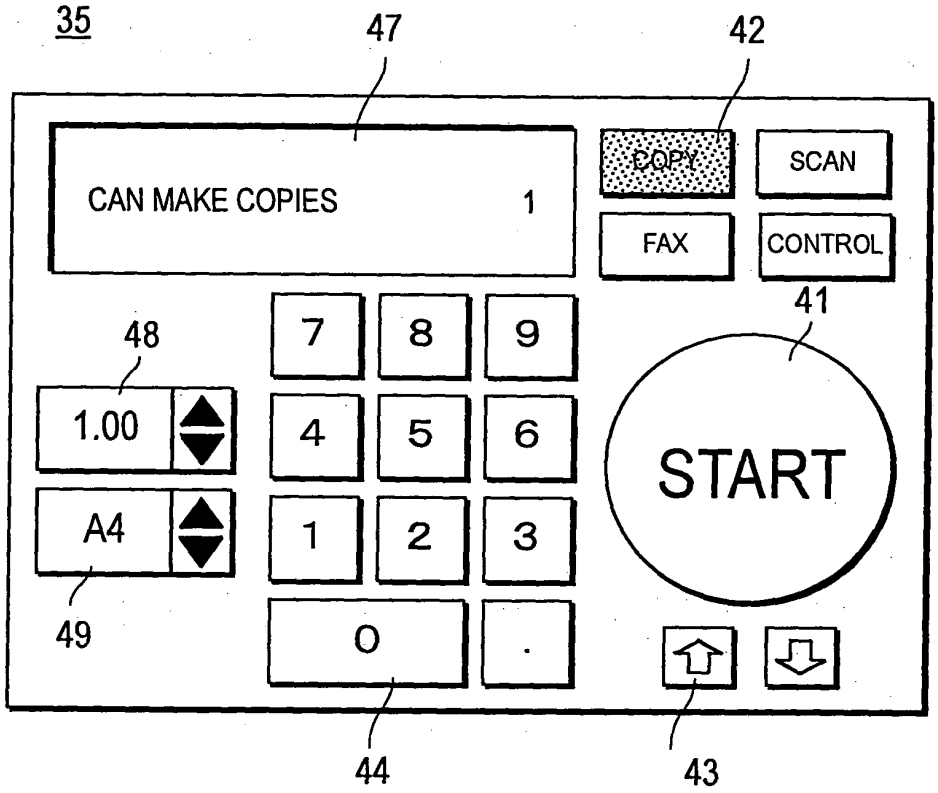

34
47
42
CAN MAKE COPIES 1
COPY
SCAN
FAX
CONTROL
A3
B4
A4
B5
A5
1.41
1.21
1.00
0.80
0.71
7
8
9
4
5
6
1
2
3
0
.
41
START
46
45
44
43

FIG. 12 24

SCREEN MODE: COPY MODE						
KEY IMAGE GROUP	KEY IMAGE CLASSIFICATION	CONSTITUTIONAL KEY IMAGE	KEY IMAGE DATA	STATUS		ATTRIBUTE
				SIZE	POSITON (X_m, Y_m) (X_n, Y_n)	
START KEY	VARIABLE SIZE KEY	START	A_1	200%	(X_{mA1}', Y_{mA1}') (X_{nA1}', Y_{nA1}')	VARIABLE SIZE, VARIABLE POSITION
MODE SWITCHING KEY	BASIC KEY	COPY	D_1	100%	(X_{mD1}, Y_{mD1}) (X_{nD1}, Y_{nD1})	FIXED SIZE, FIXED POSITION
		FAX	D_2		(X_{mD2}, Y_{mD2}) (X_{nD2}, Y_{nD2})	
		SCAN	D_3		(X_{mD3}, Y_{mD3}) (X_{nD3}, Y_{nD3})	
		CONTROL	D_4		(X_{mD4}, Y_{mD4}) (X_{nD4}, Y_{nD4})	
SIZE MODIFICATION KEY	BASIC KEY	↑	C_1	100%	(X_{mC1}, Y_{mC1}') (X_{nC1}, Y_{nC1}')	FIXED SIZE, VARIABLE POSITION
		↓	C_2		(X_{mC2}, Y_{mC2}') (X_{nC2}, Y_{nC2}')	
TEN KEY	BASIC KEY	1	B_1	100%	(X_{mB1}, Y_{mB1}') (X_{nB1}, Y_{nB1}')	FIXED SIZE, VARIABLE POSITION
		⋮	⋮		⋮	
		0	B_{10}		(X_{mB10}, Y_{mB10}') (X_{nB10}, Y_{nB10}')	
		.	B_{11}		(X_{mB11}, Y_{mB11}') (X_{nB11}, Y_{nB11}')	
MAGNIFICATION KEY	APPLICATION KEY	1.41	F_1	NO DISPLAY	NO DISPLAY	FIXED SIZE,VARIABLE POSITION
		1.21	F_2			
		1.00	F_3			
		0.80	F_4			
		0.71	F_5			
		1.41 – 0.71 SCROLL	F_6	100%	(X_{mE6}, Y_{mE6}) (X_{nE6}, Y_{nE6})	
PAPER SIZE KEY	APPLICATION KEY	A3	E_1	NO DISPLAY	NO DISPLAY	FIXED SIZE,VARIABLE POSITION
		B4	E_2			
		A4	E_3			
		B5	E_4			
		A5	E_5			
		A2 – A5 SCROLL	E_6	100%	(X_{mE6}, Y_{mE6}) (X_{nE6}, Y_{nE6})	
MESSAGE DISPLAY AREA	–	–	G_1	100%	(X_{mG1}, Y_{mG1}) (X_{nG1}, Y_{nG1})	FIXED SIZE, FIXED POSITION

APPLN. FILING DATE: AUGUST 6, 2003
TITLE: DATA INPUT DEVICE, IMAGE PROCESSING DEVICE, DATA INPUT METHOD AND COMPUTER READABLE RECORDING MEDIUM ON WHICH DATA . . .
INVENTOR(S): TSUTOMU YOSHIMI ET AL.
ATTORNEY'S DOCKET NO: 011350-315 SHEET 12 of 13

FIG. 13


35
47
42
CAN MAKE COPIES
1
COPY
SCAN
FAX
CONTROL
41
48
7
8
9
1.00
4
5
6
START
A4
1
2
3
49
0
.
44
43